

REMARKS

This amendment is responsive to the Office Action of July 2, 2007. Reconsideration and allowance of claims 2-8 and 10-22 are requested.

The Office Action

Claims 1-8 stand rejected under 35 U.S.C. § 102 as being anticipated by Feinberg (US 4,684,891).

Claim 9 was withdrawn from consideration under 37 CFR 1.75(c) and MPEP 608.01(n).

Corrected Drawings

The applicants are submitting a replacement sheet of drawings, including Figure 2, in which the boxes have been labeled. An early indication of the acceptability of the drawings is hereby requested.

The Claims Are Not Anticipated By Feinberg

Claim 2 has been placed in independent form including the subject matter of claim 1. Claim 2 calls for the echo signals to be acquired in non-Cartesian, particularly radial, sampling of the frequency space associated with the examination volume. As set forth in the present application, the radial sampling provides a higher density of data than Cartesian sampling in the center of k-space. This facilitates more accurate determination of the local relaxation times and local frequency shifts. Feinberg, which only suggests using Cartesian coordinates, fails to achieve this advantage. Accordingly, it is submitted that **claim 2 and claims 3-4, 8, 10 and 22 dependent therefrom** are not anticipated by Feinberg.

Claim 5 calls for correction of image artifacts using determined **local** relaxation times and local frequency shifts. By contrast, Feinberg adjusts the collected data in accordance with a determined **global** T₂ relaxation time.

In Feinberg, in the disclosed imaging sequence, the data at each echo time has a different T₂ dependency. That is, the T₂ relaxation continues to occur with time after the 90° excitation pulse. At each successive echo time, the T₂ relaxation has progressed further. Feinberg wants to make all of his data appear as if it has a same

degree of T_2 relaxation. For example, if Feinberg wants to bring all of the image data into conformity with the first echo, then the data collected during the second echoes is adjusted, as a whole, to appear as if it had the same T_2 evolution as the data taken during the first echo time. Thus, all of the T_2 data is corrected the same. Similarly, all of the data collected in the third echo time has the same correction (which correction is different from the second echo time correction), etc.

Because Feinberg fails to determine a local relaxation time or frequency shift, it is submitted that Feinberg does not anticipate **claim 5 or claims 6 and 11-15 dependent therefrom**.

Claim 6 calls for the correction of image artifacts to be performed based on the formula:

$$\Delta\omega'(x) = \Delta\omega(x) - \frac{i}{T_2^*(x)}$$

By contrast, Feinberg determines phase errors, which is thereafter used to normalize all of the data to the same effective TE. Thus, rather than providing the claimed correction, Feinberg adjusts the data from each echo time based on a phase to appear to have the same T_2 evolution. Accordingly, it is submitted that **claim 6** is not anticipated by Feinberg.

Claim 7 calls for the superimposition of the local relaxation times on the definitive MR image. By distinction, Feinberg uses the differences in T_2 relaxation for the data from each of the echo times in order to adjust all of the echo data to appear to have the same T_2 relaxation effect. Because Feinberg does not determine local relaxation times, Feinberg cannot superimpose such local times on the final image. Accordingly, it is submitted that **claim 7 and claims 16-21 dependent therefrom** are not anticipated by Feinberg.

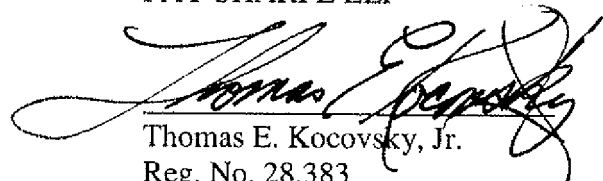
CONCLUSION

For the reasons set forth above, it is submitted that claims 2-8 and 10-22 are not anticipated by Feinberg and distinguish patentably over the references of record. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he is requested to telephone Thomas Kocovsky at (216) 861-5582.

Respectfully submitted,

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